

DoD Global Influenza Surveillance Program: *Influenza Surveillance at AFIOH*

Overall Lab Surveillance

Total Specimens Collected

- Collected in Week 52: 33
- Season Total: 699

Total Influenza Positive

Identified in Wk 52; Cumulative

- Influenza A: 10 ; 41
- Influenza B: 1 ; 5

Total Influenza Subtyped

Identified in Wk 52; Cumulative

- Influenza A/H3N2: 8 ; 21
- Influenza A/H1N1: 1 ; 2

Sentinel Site Lab Surveillance

Total Specimens Collected

- Collected in Week 52: 17
- Season Total: 502

Total Influenza Positive

Identified in Wk 52; Cumulative

- Influenza A: 7 ; 24
- Influenza B: 0 ; 3

Total Influenza Subtyped

Identified in Wk 52; Cumulative

- Influenza A/H3N2: 2 ; 12
- Influenza A/H1N1: 1 ; 1

Research Lab Surveillance

Total Specimens Collected

- Collected in Week 52: 0
- Season Total: 42

Total Influenza Positive

Identified in Wk 52; Cumulative

- Influenza A: 0 ; 0
- Influenza B: 0 ; 2

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Week 52

25-31 December 2005

Current WHO Phase of Pandemic Alert: **PHASE 3**

*Phase 3 = a new influenza virus subtype is causing disease in humans, but is not yet spreading efficiently and sustainably among humans. *The designation of phases, including decisions on when to move from one phase to another, is made by the Director-General of WHO.*

Source: [WHO](#)

Influenza (02 Oct - Present)

46 influenza viruses
41 Influenza A; 5 Influenza B

7% of the completed specimens were positive for an influenza virus: 6.4% influenza A; 0.8% influenza B.

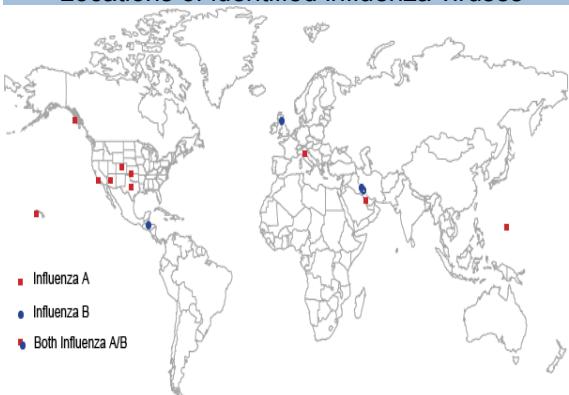
Influenza A

A (H1N1): 2 B (99): 0

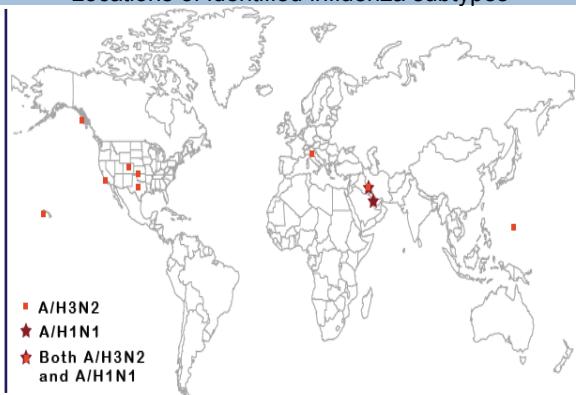
A (H3N2): 21 B (01): 0

Un-subtyped: 18 Un-subtyped: 5

Locations of identified influenza viruses



Locations of identified influenza subtypes



Vaccination Status

33% of the active duty force is currently vaccinated with the 2005-2006 northern hemisphere vaccine (as of 07 Dec 05 - data updated monthly).

- 50% Air Force; 30% Army; 26% Navy; 25% Marine Corps; 22% Coast Guard

Update: Human Avian Influenza (H5N1)

Three fatal cases confirmed in Turkey. All are members of the same family and reportedly exposed to sick birds. Deaths occurred on 1 and 5 Jan 2006. See pg 7 for an overview.

Influenza Outbreaks

The state of AZ is experiencing a high level of influenza activity. Luke AFB has disseminated appropriate educational material to base population.

Publications

[Swine Influenza A Outbreak, Fort Dix, New Jersey, 1976.](#) J.C. Gaydos, et al.

AFIOH Report Overview

This report summarizes the status of all respiratory viral cultures processed at the AFIOH laboratory, which includes specimens collected from DoD beneficiaries at 40 tri-service sentinel sites and non-sentinel sites, as well as from foreign nationals through DoD overseas research laboratories (Armed Forces Institute of Medical Sciences [AFRIMS], the Naval Medical Research Center Detachment [NMRC-D], and the US Army Center for Health Promotion and Preventive Medicine West [CHPPM-W]).

Please visit our [website](#) to review the “**Sentinel Site Surveillance Report**” for detailed information

Overall Laboratory Surveillance

Week 52 overview

- Specimens “collected” in Week 52.** To date, 33 specimens have been collected and received from 11 sites (7 sentinel and 4 non-sentinel). 12% (n=4) of these specimens have a completed result. Of these, 50% (n=2) were positive for influenza, 25% (n=1) parainfluenza, and 25% (n=1) RSV.
- Specimens “received” in Week 52.** To date, 39 specimens were received at AFIOH during week 52 and are undergoing processing at this time. Specimens were collected from patients during Weeks 49-52.

MAP: Geographic coverage of DoD Influenza Surveillance*



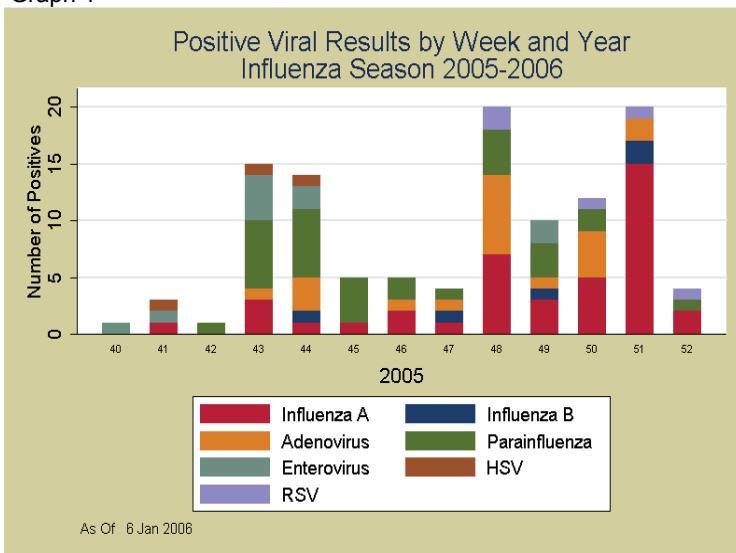
* As determined from specimen submissions. Even though an entire location is highlighted, surveillance may be limited in scope

Season overview

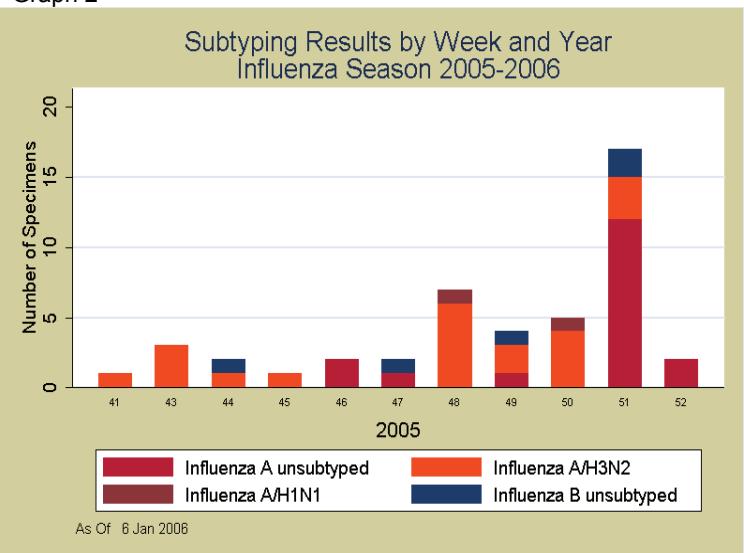
Since 02 October 2005, 699 specimens were received by the AFIOH laboratory and 92% (n=640) have a completed result (Graph 1). Of the specimens with a completed result, 82% (n=527) were negative and 18% (n=113) were positive for a respiratory virus.

Of those positive for a respiratory virus, 36% (n=41) were influenza A, 4% (n=5) were influenza B; 18% (n=20) were adenovirus, 27% (n=30) were parainfluenza, 8% (n=9) were enterovirus, 3% (n=3) were HSV; and 4% (n=5) were RSV (Graph 2).

Graph 1



Graph 2

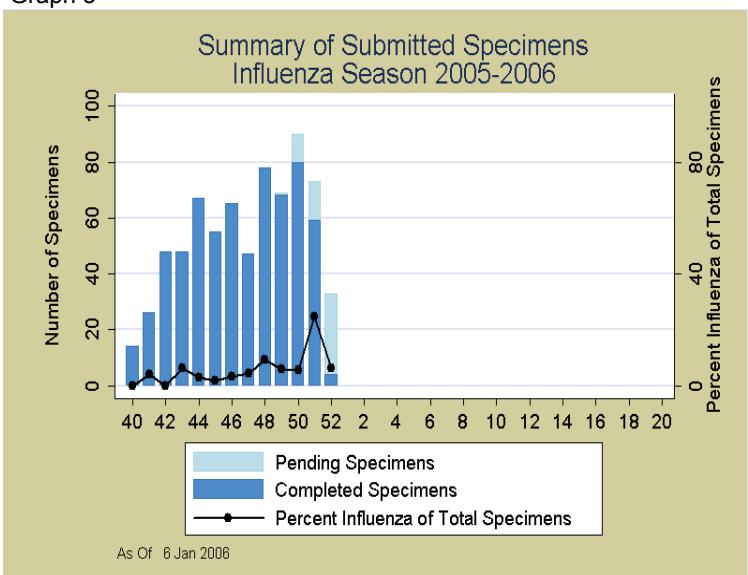


Influenza overview

Seven percent of the completed specimens were positive for an influenza virus: 6.4% influenza A; 0.8% influenza B (Graph 3).

Fifty percent (n=23) of the influenza isolates have been subtyped to date: 21 influenza A/H3N2 ; 2 influenza A/H1N1.

Graph 3



Area of Responsibility (AOR)

Since 02 October 2005, influenza isolates identified from each AOR are as follows: NORTHCOM (67%), PACOM (13%), CENTCOM (11%), EUCOM (4%), and OTHER (5%). 100% of the isolates were submitted by sentinel sites in EUCOM, PACOM, and CENTCOM. Only 59% of NORTHCOM submissions were from sentinel sites. See Table 1. for a season overview of results from specimens collected and received at the AFIOH laboratory through Week 52.

Note: Sentinel sites are distributed among the AOR as follows: CENTCOM (13%), EUCOM (16%), NORTHCOM (32%), and PACOM (39%). The "OTHER" AOR category includes specimens collected from foreign nationals at the overseas research lab locations, which are not considered sentinel sites.

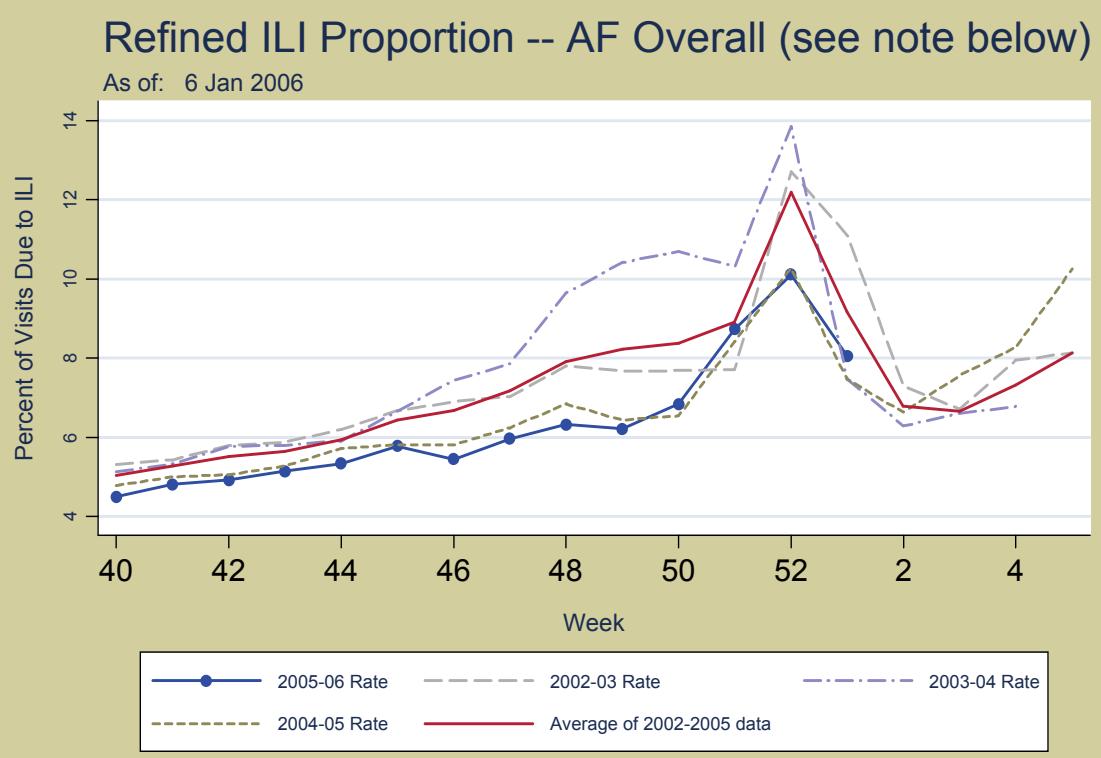
Table 1. Laboratory Results by Area of Responsibility (AOR), Week 52 and Season Totals.

Result	Area of Responsibility											ALL SITES
	CENTCOM		EUCOM		NORTHCOM		PACOM		OTHER			
	Week	Season	Week	Season	Week	Season	Week	Season	Week	Season	Week	Season
Influenza A		3		1	2	31		6				41
Influenza B		2		1							2	5
Adenovirus				3		12		5				20
Parainfluenza		1		9	1	18		1			1	30
Enterovirus		2		4		2		1				9
HSV		1		1							1	3
RSV					1	5						5
Negative		25		74		267		123			38	527
Pending	2	12	3	5	24	40		2				59
TOTAL RECEIVED	2	46	3	98	28	375	0	138	0	42	699	

Influenza-Like Illness (ILI)

Overview. Influenza-like illness (ILI) activity among Air Force MTFs has increased to 10.11% in Week 52, following a similar pattern as last season and notably lower than the average. It is important to note that data in Week 01 is not complete and may vary from next week's graph.

*Influenza-like illness (ILI) activity is gathered from the Standard Ambulatory Data Registry (SADR). The data are cleaned and a summary total of ICD-9's that match a smaller, but more specific and sensitive list of ICDs than is in the ESSENCE tool, are presented (Graph 3). The Surveillance Team at AFIOH are in the process of creating a DoD-wide ILI graph.

Graph 3. ILI Activity among Air Force Military Treatment Facilities

Influenza Surveillance

Sentinel Site Status. Fifty-nine percent (n=27) of the 46 influenza isolates were collected from sentinel sites, 37% (n=17) were from non-sentinel sites, and 4% (n=2) were from overseas research locations (Table 2).

FMP. Patients with a positive influenza result were 46% (n=21) active duty members, 30% (n=14) children, 11% (n=5) spouses, and 13% (n=6) non-DoD beneficiary (Table 3).

Vaccination. Of the 46 influenza-positive patients, vaccination status was identified on 22 (48%) patients. Of these, 7 (32%) were vaccinated > 2wks prior to their illness (1 patient was vaccinated 2 days prior to being ill). (Table 3).

Hospitalization/Quarters Status. 48% of the patients with positive influenza had an accompanying influenza surveillance questionnaire. Six patients positive for influenza A (5 A/H3N2 and 1 A/H1N1) were placed on quarters for 24-72 hrs.

Travel history. One active duty member traveled to AZ in December and sought care within 2 days of return. ILI and influenza activity have been steadily increasing in the state of AZ.

Table 2. Influenza Demographics by SITE and REGION

Site by REGION	Sentinel Status	Newly Identified		Season		Total Influenza
		Flu A	Flu B	Flu A	Flu B	
West South Central						
Brooks City-Base, TX	Non-Sentinel	0	0	6	0	6
Lackland AFB, TX	Non-Sentinel	1	0	5	0	5
Tinker AFB, OK	Non-Sentinel	0	0	3	0	3
Mountain						
USAF Academy, CO	Sentinel	2	0	13	0	13
Luke AFB, TX	Non-Sentinel	2	0	2	0	2
Pacific						
CGS Ketchikan, AK	Sentinel	1	0	2	0	2
Edwards AFB, CA	Non-Sentinel	0	0	1	0	1
Elmendorf AFB, AK	Sentinel	0	0	1	0	1
NMC San Diego, CA	Sentinel	0	0	1	0	1
Tripler AMC, HI	Sentinel	0	0	1	0	1
Pacific Rim						
Andersen AFB, Guam	Sentinel	0	0	2	0	2
Europe						
Aviano AB, Italy	Sentinel	0	0	1	0	1
RAF Lakenheath, U.K.	Sentinel	0	0	0	1	1
Deployed						
Al Udeid AB, Qatar	Sentinel	0	0	1	0	1
Camp Arifjan, Kuwait	Sentinel	0	0	2	1	3
Camp Buehring, Kuwait	Sentinel	0	0	0	1	1
Central America						
Honduras JTF Bravo	Research lab	0	0	0	2	2
Total Influenza		6	0	41	5	46

Table 3. Influenza Demographics: Age, FMP, Vaccination, and Hospitalization

Demographics	Newly Identified		Season		Demographics	Newly Identified		Season	
Age (years)	A	B	A	B	Vaccination Status*	A	B	A	B
0-5	3	0	6	0	Injection	0	1	4	1
6-19	2	0	10	1	Nasal Spray (FluMist)	0	0	2	0
20-64	0	1	20	2	Vax Type unknown	0	0	1	0
65 +	1	0	1	0	Not Vaccinated	0	0	8	0
Unknown	0	0	4	2	Unknown	3	0	9	2
OVERALL TOTALS	6	1	41	5	OVERALL TOTALS	3	1	24	3
Family Prefix Status	A	B	A	B	Hospitalization Status*	A	B	A	B
Military member/Sponsor	2	1	19	2	Hospitalized	0	0	0	0
Spouse	0	0	4	1	Quarters	0	0	6	0
Child	4	0	14	0	OVERALL TOTALS	0	0	6	0
Other/Unknown	0	0	4	2					
OVERALL TOTALS	6	1	41	5					

*Describes sentinel site data only

Additional Influenza Surveillance: Army MEDCENS

The Army performs influenza surveillance at 6 Army Medical Center (MEDCEN) locations (Dwight David Eisenhower Army Medical Center [DDEAMC], Walter Reed Army Medical Center [WRAMC], Brooke Army Medical Center [BAMC], Madigan Army Medical Center [MAMC], Tripler Army Medical Center [TAMC], and Landstuhl Regional Medical Center [LRMC]), two of which are included in AFIOH's sentinel site surveillance network (please see map to right).

The Army MEDCEN sites are major medical centers equipped with the capability of detecting respiratory viruses, including influenza. It is important to note that the methodology varies at each site (i.e., testing procedures include direct fluorescent-antibody [DFA], various rapid antigen tests, culture, and polymerase chain reaction [PCR]) and reporting is routine, but varies from site to site (i.e., weekly, bi-weekly, monthly). The information reported and shared with AFIOH describes results from the individual MEDCENS and does not include demographic information at this time.



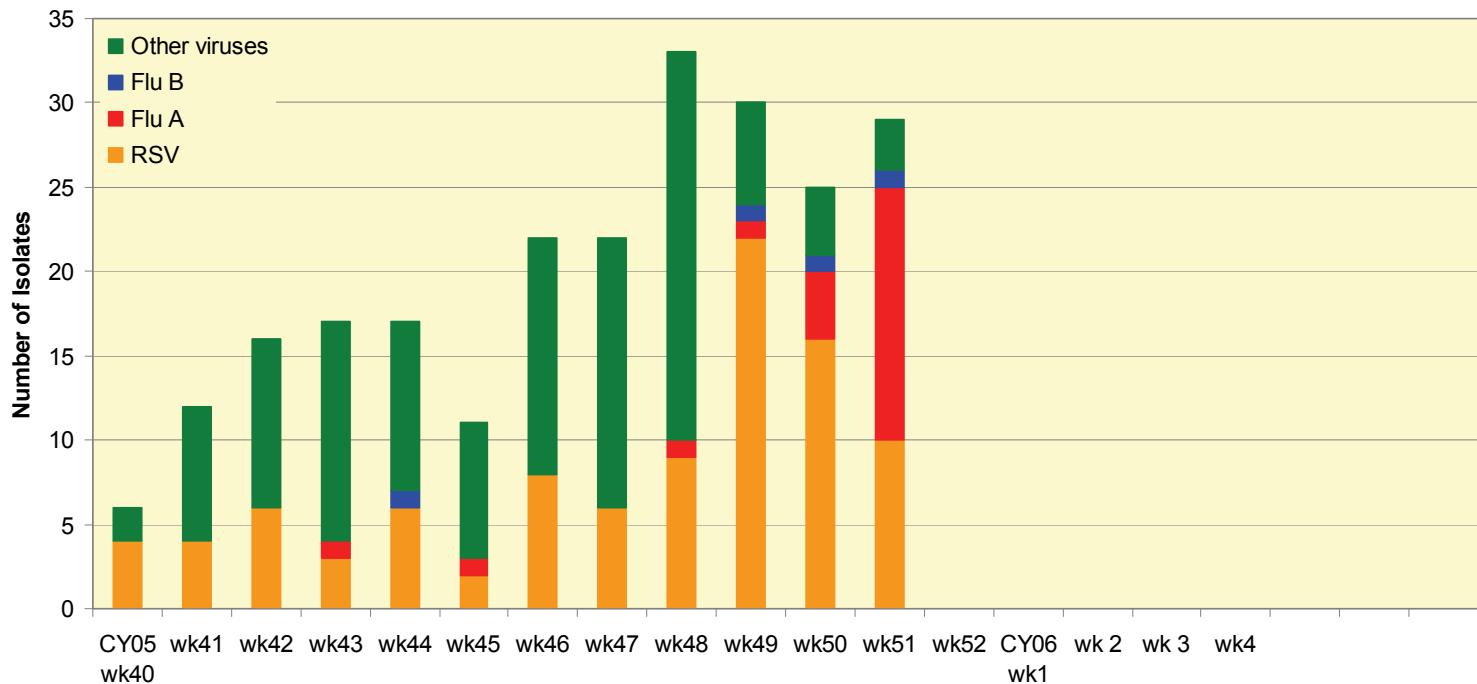
Week 51 overview. (No change from Week 51's report last week). 151 specimens were collected and tested during Week 51 (10% [n=16] tested by LRMC; 34% (n=51) from BAMC; 18% (n=27) from WRAMC; 38% (n=57) from TAMC. 19% (n=29) were positive for a respiratory virus (15 influenza A; 1 influenza B; 10 RSV; 3 parainfluenza).

Season overview: Since 02 October 2005, 1,288 specimens were collected and tested. Eighty-one percent (n=1,048) were negative and 19% (n=237) were positive for a respiratory virus (23 influenza A; 4 influenza B; 96 RSV; 29 parainfluenza; and 85 adenovirus). Of the specimens collected and tested, 2% were positive for an influenza virus (Graph 4.).

Subtyping: No data to report.

POC for Army MEDCEN surveillance is MAJ Wade Aldous.

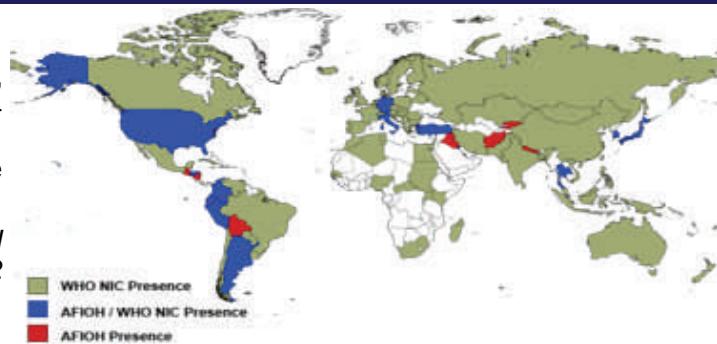
Graph 4. Number of Positive Respiratory Viruses, ARMY MEDCEN Weekly Report (as of 30 December 2005).



Contributions to National and Global Influenza Surveillance

It is important to note that although a country is highlighted, surveillance may be limited in scope. AFIOH provides surveillance data from 21 countries - 8 countries (Bolivia, El Salvador, Guatemala, Iraq, Kyrgyzstan, Nepal, Nicaragua, and Qatar) are not otherwise included in the current WHO network.

Note: Map describes countries submitting specimens to AFIOH and does not include all DoD contributing countries (i.e., NAMRU-2 and NAMRU-3 surveillance described on page 8).



Data Sharing

AFIOH electronically reports data to CDC using the Public Health

Laboratory Information System (PHLIS). The data shared is incorporated into WHO's and CDC's influenza surveillance summaries. Additionally, data from Texas military sites are reported to the Texas Department of State Health Services (TDSHS).

CDC / WHO Influenza Surveillance

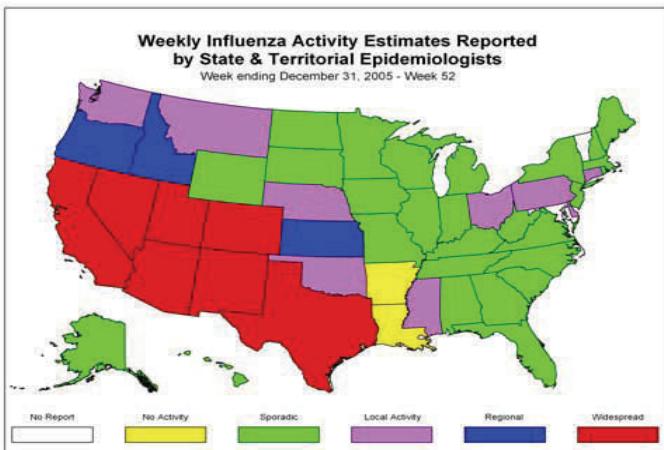
CDC reported a continued increase in influenza activity in the western US during Week 52. Of the specimens tested, 10.1% were positive for an influenza virus.

NOTE: WHO website was inaccessible at the time this report was generated. Data displayed in WHO table and WHO map below reflects Week 51's data. Please see the WHO influenza activity table and CDC and WHO maps below.

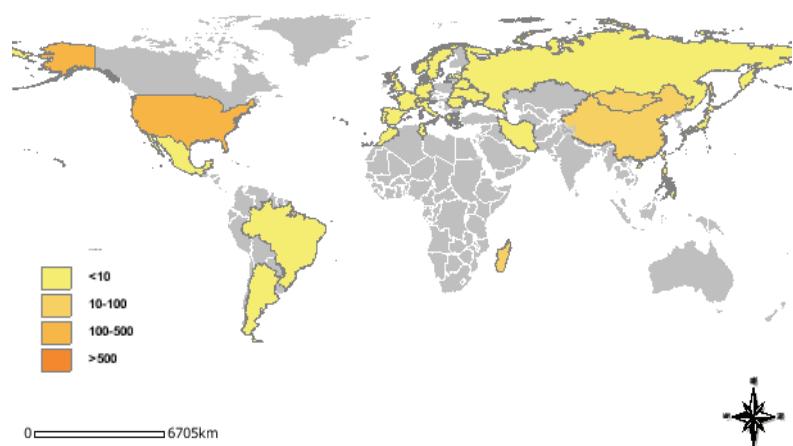
***WHO data may vary slightly from week to week. It is important to note that AFIOH uses the current week's data on WHO's website. Please refer to [WHO's website](#) for detailed information regarding the WHO Influenza Surveillance data.*

COUNTRY	WHO Surveillance (http://gamapserver.who.int/GlobalAtlas/)					Total Isolates
	A(H1) Wk 51 Season	A(H3) Wk 51 Season	A(not typed) Wk 51 Season	B (not typed) Wk 51 Season		
Argentina	0	0	0	0	0	10
Australia	0	0	0	0	2	13
Brazil	0	0	0	0	6	8
Chile	0	0	0	0	0	2
China	5	34	2	23	26	49
Egypt	0	1	0	0	0	0
France	0	3	0	0	1	4
Germany	0	0	0	0	1	0
Greece	0	0	0	0	0	1
Iran	0	0	0	0	1	1
Israel	0	0	0	2	0	1
Japan	4	34	4	117	0	0
Latvia	0	0	0	0	2	1
Madagascar	11	44	0	5	0	0
Mexico	0	23	0	63	1	131
Mongolia	0	0	9	10	12	17
Morocco	0	0	0	0	0	4
New Caledonia	0	0	0	2	0	4
Norway	0	0	0	1	1	6
Peru	0	0	0	0	10	0
Phillipines	0	0	0	0	0	3
Poland	0	0	0	0	1	0
Portugal	0	2	0	0	0	6
Slovenia	0	0	0	1	0	1
Spain	0	0	0	0	0	0
Sweden	0	0	0	4	1	3
Switzerland	0	1	0	0	0	2
Thailand	0	2	0	51	0	4
Tunisia	5	28	1	5	0	0
Turkey	0	0	0	0	1	0
U.K	1	2	1	3	0	6
U.S.A	0	4	94	427	60	224
TOTAL	26	178	111	714	79	432
					26	245
						1,569

CDC U.S. Influenza Surveillance Map¹



WHO International Influenza Surveillance Map²



1. National Influenza Activity (CDC): <http://www.cdc.gov/ncidod/diseases/flu/weeklychoice.htm>

2. International Influenza Activity (WHO): <http://gamapserver.who.int/GlobalAtlas/home.asp>

Avian Influenza Updates

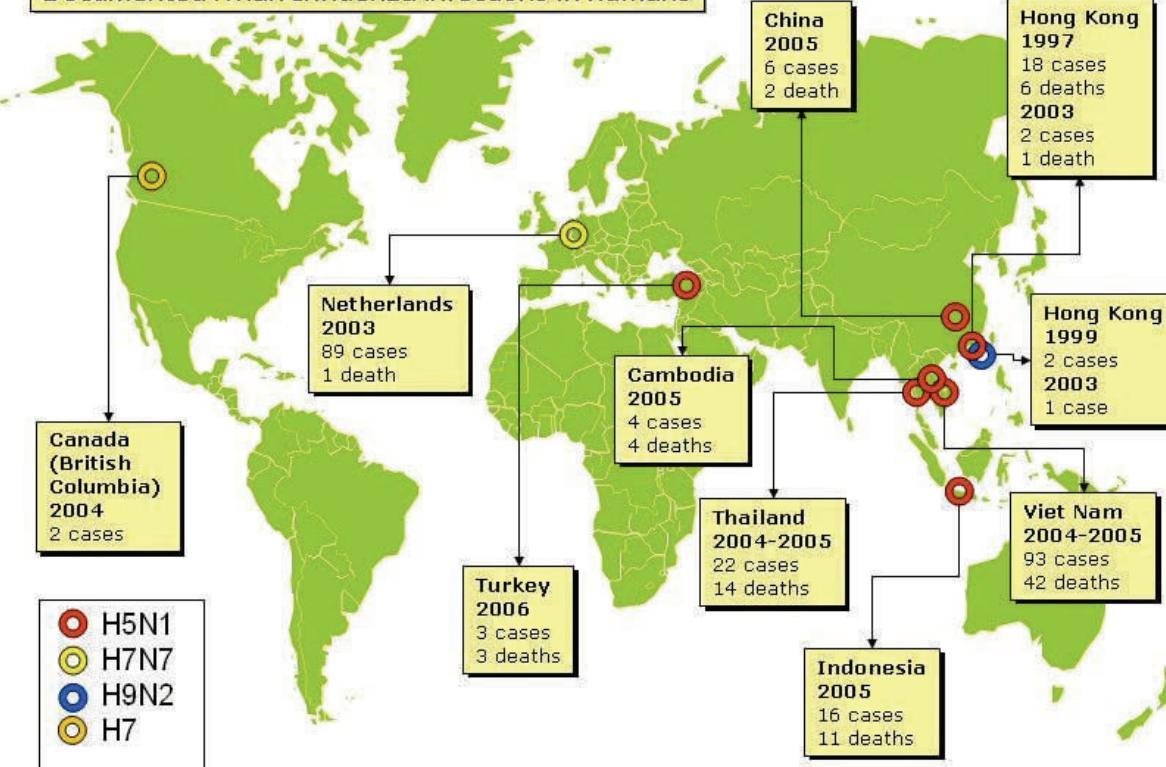
Human Avian Influenza. 145 cases of lab-confirmed avian influenza (53% case fatality rate). Table and map were gathered from the EUROPA website on 06 January 2006.

Reference: http://europa.eu.int/comm/health/ph_threats/com/Influenza/ai_current_en.htm

Current Situation of Avian Influenza and human cases related to the H5N1 virus subtype (as of 6 January 2006)										
Country	Cumulative number of confirmed human cases								Comments	
	Cases				Deaths					
	2003	2004	2005	2006	2003	2004	2005	2006		
Cambodia	0	0	4	0	0	0	4	0	No new case reported since 4 May 2005.	
China (People's Rep. of)	0	0	7	0	0	0	3	0	One additional case reported in Fujian province. Symptoms onset on 6 December, and died on 21 December. No direct exposure to sick birds has been detected; investigation on source of infection is ongoing.	
Indonesia	0	0	16	0	0	0	11	0	Two new fatal cases confirmed: the first developed symptoms on 8 December, hospitalised on 13 December and died on 15 December; the second case had onset of symptoms on 9 December, hospitalised on 11 and died on 12 December. H5N1 endemic in poultry and widespread.	
Thailand	0	17	5	0	0	12	2	0	One additional fatal case reported with onset of symptoms on 25 November, hospitalised on 5 December and died on 7 December. Several outbreaks in poultry reported to OIE on 3 November in three provinces.	
Turkey	0	0	0	3	0	0	0	3	Three confirmed cases (A/H5) in Agri Province, awaiting confirmation from WHO Reference Laboratory, all have died. These are member of the same family reportedly exposed to sick birds. The deaths occurred on 1 (one case) and 5 January (two cases). Investigation ongoing with WHO/EU international team assisting local authorities. Outbreaks in poultry still active in neighbouring provinces.	
Viet Nam	3	29	61	0	3	20	19	0	One new case confirmed with onset of symptoms on 14 November. The case is now recovering	
	3	46	93	3	3	32	39	3		
	145				77					

Number of cases includes number of deaths.
All cases are laboratory-confirmed.
Bold text indicates changes from previous update

Documented Avian Influenza infections in humans



DoD Global Influenza Surveillance Program Background

DoD-GEIS Influenza Surveillance Network

The DoD Global Influenza Surveillance Program was established by the Global Emerging Infections Surveillance and Response System (GEIS) in 1997. The program established an influenza surveillance network, which includes the Air Force Influenza Surveillance Network (global influenza surveillance established in 1976), Navy (recruit adenovirus surveillance established in 1996), and the DoD overseas medical research facilities (i.e., the Naval Medical Research Unit located in Cairo, Egypt [NAMRU-2] and the Naval Medical Research Unit located in Jakarta, Indonesia [NAMRU-3]).

AFIOH Influenza Surveillance Network

In 1976, the US Air Force Medical Service began conducting routine lab-based surveillance of influenza throughout the world. Efforts were expanded when it became part of the DoD-GEIS influenza surveillance network in 1997. AFIOH manages the Air Force surveillance program that includes global influenza surveillance among DoD beneficiaries at 40 tri-service sentinel sites (including deployed locations in Iraq, Qatar, and Kyrgyzstan), several non-sentinel sites, two DoD overseas medical research laboratories (the Armed Forces Research Institute of Medical Sciences located in Bangkok, Thailand [AFRIMS], and the U.S. Naval Medical Research Center-Detachment [NMRC-D] located in Lima, Peru) that collect specimens from local residents in Nepal, Thailand, Argentina, Bolivia, Ecuador, Peru, and Colombia, and the US Army Center for Health Promotion and Preventive Medicine-West (CHPPM-W), that collect specimens from local residents in El Salvador, Guatemala, and Honduras.

Processing Methods

Specimens are processed in BSL-2 conditions (BSL-3 available) and tested for influenza, parainfluenza, adenovirus, enterovirus, herpes simplex virus (HSV), and respiratory syncytial virus (RSV). Specimens are held up to 14 days before a negative result is given. All influenza isolates are typed as A or B and a portion are subtyped using hemagglutination-inhibition (HI) or polymerase chain reaction (PCR) procedures. A portion of the these isolates undergo molecular sequencing.

2005-2006 Trivalent Influenza Vaccine Composition

Northern Hemisphere

- A/New Caledonia/20/99-like (H1N1)
- A/California/7/2004-like (H3N2)
- B/Shanghai/361/2002-like

2006 Southern Hemisphere

- A/New Caledonia/20/99-like (H1N1)
- A/California/7/2004-like (H3N2)*
- B/Malaysia/2506/2004

*The currently used vaccine virus is A/New York/55/2004

This report was prepared on **06 January 2006**. For an expanded view of the information in this report, visit our website at <https://gumbo.brooks.af.mil/pestilence/Influenza/>. Also available on our website is a list of previous weekly surveillance reports, program information for sentinel sites (including an educational briefing and instruction pamphlets for clinic staff), and an overview of historical data.

Please visit the [DoD-GEIS website](#) for an overview of influenza surveillance at all collaborating centers.

AFIOH Contact Information

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